

Title (en)

Safety device for vehicles using multi-channel audio system

Title (de)

Sicherheitsvorrichtung für Fahrzeuge mit einem Mehrkanal-Audio-System

Title (fr)

Dispositif de sécurité pour véhicules utilisant un système audio multi-canaux

Publication

**EP 1319962 A1 20030618 (EN)**

Application

**EP 02019805 A 20020905**

Priority

KR 20010078229 A 20011211

Abstract (en)

The present invention relates to a safety device for a vehicle using a multi-channel audio system. The safety device of the present invention comprises a plurality of speakers, a display unit and an audio circuit. It further comprises a plurality of sound wave sensors mounted on front and rear parts and left and right sides of the vehicle, a plurality of A/D converters for converting analog signals of the reflected sound waves from the sound wave sensors to digital signals, and a control means for converting the information on the location of obstacles to speaker output signals if the obstacle is in the danger area such that sounds are generated by the speakers. Information on the location of the obstacle also may be displayed on the display unit. <IMAGE>

IPC 1-7

**G01S 15/93**; **G08G 1/00**; **G08G 1/16**; **B60Q 1/00**; **B62D 15/02**; **B60Q 1/48**; **B60K 31/00**

IPC 8 full level

**B60R 21/00** (2006.01); **G01S 15/931** (2020.01); **B60Q 5/00** (2006.01); **B62D 15/02** (2006.01); **G08B 21/00** (2006.01); **G08G 1/16** (2006.01); **H04S 3/00** (2006.01); **G01S 15/87** (2006.01)

CPC (source: EP KR US)

**B60Q 5/00** (2013.01 - KR); **G01S 15/931** (2013.01 - EP US); **G08G 1/166** (2013.01 - EP US); **H04S 3/00** (2013.01 - EP US); **G01S 15/87** (2013.01 - EP US)

Citation (search report)

- [X] US 4528563 A 19850709 - TAKEUCHI MIKIO [JP]
- [XY] DE 19652930 A1 19980625 - TEVES GMBH ALFRED [DE]
- [YA] US 5091726 A 19920225 - SHYU JIA-MING [TW]

Cited by

EP2011711A1; EP2161174A1; GB2622197A; US8212659B2; US9552730B2; WO2013045374A1

Designated contracting state (EPC)

DE FR GB

DOCDB simple family (publication)

**EP 1319962 A1 20030618**; **EP 1319962 B1 20070124**; DE 60217809 D1 20070315; DE 60217809 T2 20071115; JP 2003196799 A 20030711; KR 100423728 B1 20040322; KR 20030048285 A 20030619; US 2003108212 A1 20030612

DOCDB simple family (application)

**EP 02019805 A 20020905**; DE 60217809 T 20020905; JP 2002203329 A 20020711; KR 20010078229 A 20011211; US 24142502 A 20020910